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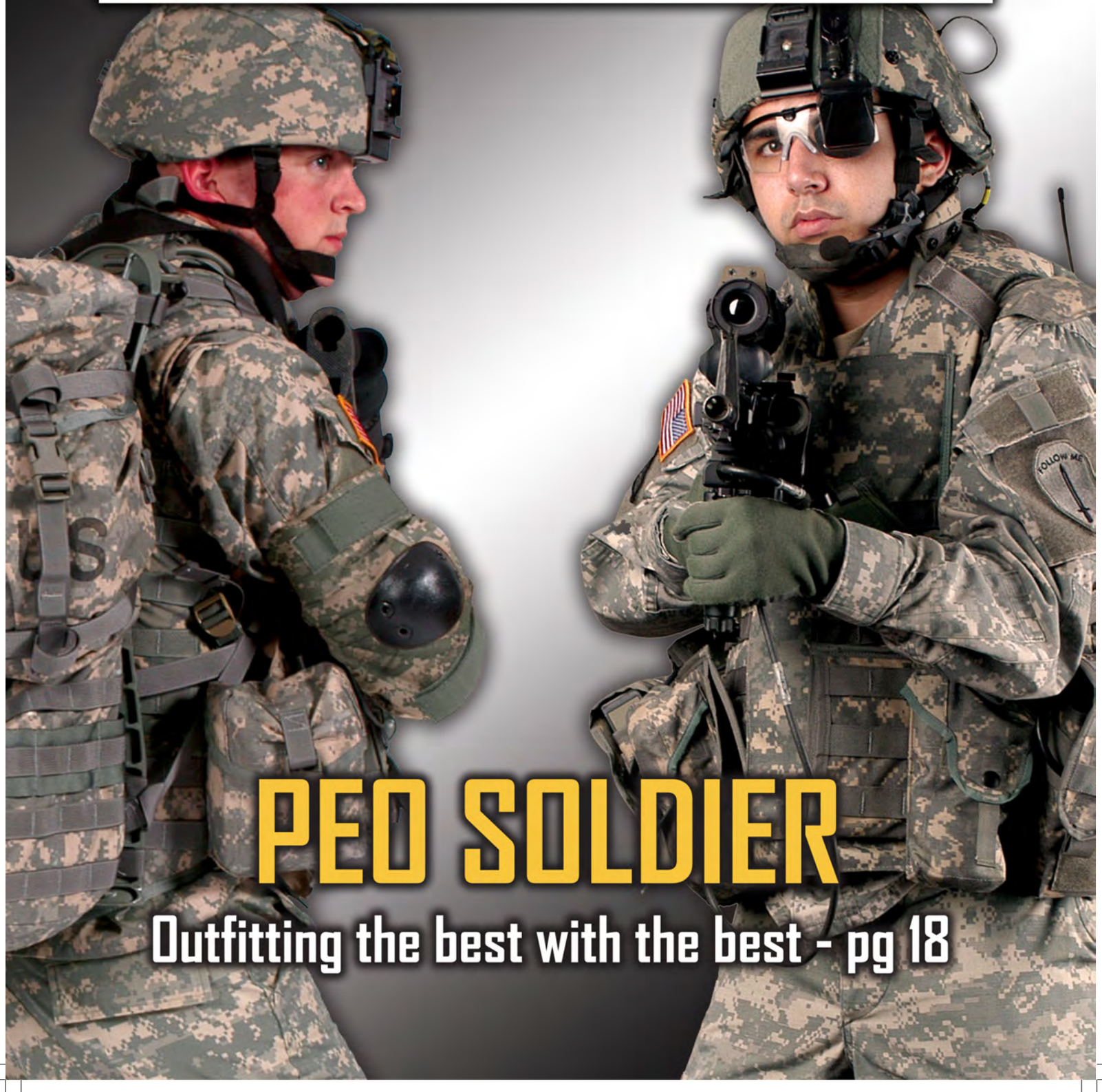

PEO SOLDIER

Outfitting the best with the best - pg 18

PEO SOLDIER

Seeing 'Soldiers as systems'

By Dave Crozier

The American Soldier: the most complex combat machine in the world, made up of more moving parts, sensors and systems than a Bradley Fighting Vehicle. Each Soldier is unique, yet – for the most part – of similar make and design. In a normal world the Soldier relies on all of his/her parts working together in order to survive. In combat, however, the Soldier requires some assistance.

Enter Program Executive Office (PEO) Soldier. Stood up in 2002, the office has one single purpose: to equip the Soldier with the best products available.

"Prior to 2002 if you looked at all the products that made up everything a Soldier wore or carried, it was spread out into various organizations in almost every nook and cranny in the Army," said Brig. Gen. Jamey Moran, director of PEO Soldier. "So in 2002 the Army [centralized things and] started to treat the Soldier as a system just as we do in combat platforms: missiles, tanks, aviation and weapons systems."

PEO Soldier, based out of Fort Belvoir, Va., is broken out into three project areas, each with their own product areas to manage.

Moran said the Soldier is the most deployed combat platform and the most employed combat platform in America's arsenal and that it has been long overdue for the Army to start focusing on the individual Soldier.

"Basically PEO Soldier is here to ensure that all equipment the Soldier carries is just as integrated as the equipment on a tank, or a helicopter or a combat ship," Moran said. "Since we have stood up this office we have established 10 product/project managers who are responsible for a different commodity areas within PEO Soldier. Then we have the integration programs like Land Warrior, Mounted Warrior and Air Warrior."

PEO Soldier, based out of Fort Belvoir, Va., and Picatinny Arsenal, N.J., is broken into three distinct project offices: Project Manager Warrior, Project Manager Soldier Equipment and Project Manager Soldier Weapons (see associated illustration). Within these project offices are the various individual product managers that are responsible for a product line that has reached 376 items.

"So when I say we take care of everything a Soldier wears or carries, it is everything from a parachute, to the shoes that a cook wears, to all the weapons and ammunition a Soldier carries," Moran said. "That's every pistol, rifle, shotgun, machinegun, grenade launcher in the Army; every piece of electronics that a Soldier carries. All of the sights for the rifles, lasers pointers and designators, even things that Soldiers can carry to [guide] down JDAM (joint direct attack munitions) bombs from B-52 bombers."

Today, unlike in the past, PEO Soldier is fully funded to get the best equipment to the Soldiers as quickly as they can.

"The money and the number of products are not important; the number of Soldiers we touch is the most important thing we do," Moran said. "And, as of the end of January, we touched more than 540,000 Soldiers. We have conducted the largest fielding [of equipment] since World War II."

Moran believes that PEO Soldier accomplishes three main objectives – keeping Soldiers alive, improving their quality of life and helping them kill and destroy the enemy.

One of the biggest changes that PEO Soldier has brought about is how it deals with individual Soldiers by seeking input from them. That input is what drives the creation and change in products.

"Everything a Soldier needs to function on the battlefield, those different pieces of equipment, is designed for the individual Soldier and not the other way around," said Command Sgt. Maj. Lunn, command sergeant major for PEO Soldier. "Therefore when we create new helmets, new weapon systems, we take into consideration the Soldier perspective on it so when they go out and use it, it is comfortable, durable and it moves to the body of the Soldier and how they perform on the battlefield. We don't want to have the Soldier adapting to the equipment; we want to adapt the equipment to the Soldier."

One area that Moran said is a shining example of how Soldier input has made a difference is the development of the Army Combat Uniform (ACU).

"The uniform we are wearing today was designed by NCOs and I think it is one of the successes here at PEO Soldier," he said." I think the individual Soldier has a lot of impact on what we do. Everything we do is tested on Soldiers, and we try to go out of our way to get Soldier input."

Another area that Moran is particularly proud of is the establishment of the Rapid Fielding Initiative (RFI).

"We have had a lot of success with the ACU, but I have to consider the RFI as our greatest success. There are 58 items in RFI that include clothing and textiles, weapons and ammunition, electronics and sensors, and they didn't exist in a package before we got here," Moran said. "That is a concept that the PEO Soldier team created."

Rapid Fielding Initiative (RFI)

When a unit is gearing up for deployment, will they have what they need to do the mission? Thanks to the folks at RFI with the exception of heavy equipment, they will – not only for the unit, but right down to the individual Soldier.

"You can break the RFI kit down into two general categories: the Soldier kit and the unit kit," said Maj. Russ Perkins, assistant program manager for RFI. "There is everything from the helmet, t-shirt, socks, belt, cap, etc; that's the Soldier kit. Then there is the unit kit which has a significant amount of weapons enhancements, mounting gear as well as the MOLLE (Modular Lightweight Load Carrying Equipment developed to replace the All-Purpose Lightweight Individual Carrying Equipment and Integrated Individual Fighting System) itself."

Currently there are 58 items on the RFI list (see illustration, Page 20), a list that has grown from its original 23 items when RFI began. The biggest challenge the RFI shop has to overcome is building a fielding schedule and then coordinating with the units to get the fielding done, Perkins said.

A typical fielding starts with a site visit from the folks at RFI. RFI gives the unit briefings to show what the unit needs to have ready as far as support staff, staging areas and fielding areas to accept the gear.

Perkins said that his office sets the conditions for the equipment they will receive when the fielding team does arrive, his office has done everything it can to ensure the unit knows how to react when the kit comes.

"When the units understand the process, it goes smoothly," Perkins said. "That's our biggest challenge: getting the information to the command and having it trickle down to the lowest level."

Perkins said that units who are outfitted for deployment really do need to have a coordinated effort as an average fielding team will show up with 20 to 40 tractor trailers worth of "kit." For a brigade combat team of 3,720 Soldiers, he added, it takes 18 tractor trailers to deliver it all.

"An RFI is just like any other training event. You have to plan for it, get the details down to the lowest level," he said. "And if you do that, it will go great. If you don't plan for it, it will be painful. It will get done, but it will be painful."

To do the actual fielding, Perkins said, that it could take as long as two months for an average unit to complete. It depends on how the unit wants to complete the fielding – at night, on weekends, during duty hours – however the unit sees fit to get their Soldiers fitted. A recent fielding at Fort Hood, Texas was spread out over three months and done in three separate phases. Another fielding for a brigade in Germany took the entire month of August.

Once the kit arrives at the unit, Soldiers are fitted with items like boots, gloves and helmets to ensure that each Soldier is given the right size. Also there are several items that RFI trains the Soldiers on – various weapons and accessories, the improved first aid kit, as well as the new Advanced Combat Helmet.

As of January RFI has outfitted more than 540,000 Soldiers with new equipment. RFI can outfit, on average, 10,000 to 20,000 Soldiers each month.

Currently, Perkins said, that RFI has a standard issue package that is based on a bell curve in hopes of having the right amount of product, to include clothing sizes, for every fielding. RFI has achieved a 94 percent success rate in getting every Soldier fitted.

"The goal is 100 percent, but I think that when you are talking about thousands of items multiplied across all of those bodies in a division or brigade it is hard to achieve," he said. "For any given unit you just may have those people [that wear the odd size that is not a part of a standard fielding kit]."

Those who may not get their full kit during fielding can expect to have it before they enter the combat theater, Perkins said. Besides getting their individual kits, Soldiers are also trained on how to use any new equipment they receive – the MOLLE, improved first aid kit, new advanced combat helmet and a host of other equipment items to include weapons, night sights, lasers and accessories.

Currently those units identified for an RFI fitting are determined through the Army's deployment schedule. One of the biggest things that Perkins said he feels great about is the fact that the equipment RFI brings to the Soldiers is the best that industry can provide.

"I am getting them the best stuff the Army has to offer and the [Soldier] doesn't have to buy it," he said. "It wasn't long ago that they were buying poly pro gloves, cool socks and other items and now we are fielding it to them."

He noted, however, that many items in the RFI are accountable and not free issue. They will need to be maintained and replaced by either the unit (for TA50 and CIF items) or individual Soldier (if it is a clothing item) when no longer serviceable. He added that the RFI is just to get things started and that units will have to sustain it.

Depending on a Soldier's mission and position he or she will receive a variation of the Land Warrior ensemble.

On the National Guard and Reserve side of the house, Master Sgt. Robert Lainhart, Reserve Component representative at RFI, said it is like "Christmas without snow." He remarked that the Reserve component is getting the same items as the active-duty and they are getting it all at once and not piecemealed as in years past.

"There has been nothing like this," he said. "The Soldier kit regardless of component, regardless of unit, regardless of service, they get the same things. Of course the units receive different items based on their missions, but it is the same for us as it is for the active-duty units."

There are many new products being tested and more being improved under the PEO Soldier umbrella and Soldier input is not only asked for, it is encouraged in all product and project offices as they apply the Soldier as a System concept.

Today's Soldiers and units can pick from a variety of approved Combat Eye Protection. Everything from the Wiley X-SG1 to Oakley's and UVEX XC. Some allow for prescription inserts as well.

Project Soldier Warrior

Project Soldier Warrior – broken out into Product Manager Air Warrior, Product Manager Land Warrior and Product Manager Mounted Warrior – applies the "Soldier as a system" concept by developing components into individually integrated systems designed to increase combat effectiveness, decrease combat load and improve mission flexibility.

Heading up that department is Col. Richard D. Hansen, Jr. who said that treating the Soldier as a system is a big challenge because it takes it down to one common denominator – the Soldier.

"We don't go to the motor pool and get an engine one year, tires the next year and bits and pieces here and there until we have a vehicle," Hansen said. "And so we are trying to develop the Soldier as a system and bring the entire system to them."

Some of the specific items Hansen's section is working on deal with improved communications, situational awareness and survivability.

"We have spent the last 10 to 13 years in the Army digitizing our tanks and Bradleys and other platforms, but when the Soldiers get out of the back of those vehicles they lose all their situational awareness," he said. "So we are bringing some of that to the Soldier through our flagship program, Land Warrior."

In the current fight, Land Warrior will take care of Soldiers for the current fight and Ground Soldier for future combat. The Land Warrior ensemble, Hansen said, is an integrated modular system that incorporates a basic ensemble and depending on your position, different sub-systems (see illustration at top of page).

"For instance the squad leader will get the weapon sub-system which consists of the daylight video sight (allows Soldiers to see their target through their heads-up

display without exposing themselves), multi-function laser and a weapon-user interface (pistol grip control on the front of the weapon)," he said. "Leaders, like the platoon sergeant and some brigade and battalion NCOs, will get the Commander's Digital Assistant which is a handheld Force Battle Command Brigade and Below (FBCB2) communications platform."

Hansen said all Soldiers will receive the basic system which includes the heads-up display, headset and microphone, Soldier control unit, the Enhanced Position Locating Reporting System (EPLRS) Radio, and navigation module. The entire system is distributed across an integrated body armor to balance the weight. At the basic team-leader level the systems weigh in at 16 pounds; squad leader an extra 2 pounds; and for the leader position an extra 8 pounds.

"We are trying to see what package is best for each Soldier," Hansen said. "We are looking at the components to see what the best capability is at each echelon."

Everything a Soldier wears or carries, to include uniforms like the Firefighter's Integrated Suit-Combat and the Advanced Bomb Suit above, is under the umbrella of PEO Soldier. Coming soon is a new Extreme Cold Weather Clothing System.

The Future Combat Soldier is comprised in the Ground Soldier systems which will give the Soldier more capability, less weight to carry, and more lethality, Hansen explained. Currently in research and development the NCOs of the future will be getting a new system that will look like they came out of the movie, "Starship Trooper" – complete with exoskeleton.

Thermal weapon sights allow Soldiers to detect and engage targets day or night.

In the Mounted Warrior program Hansen's group is working on providing Soldiers with heads-up displays and wireless intercoms. Currently, he explained, Soldiers have to duck down into a vehicle to obtain situational awareness and to see the remote weapons systems station or oil pressure and vehicle instrumentation. This new system will give the Soldier the same situational awareness even when dismounted from their vehicle.

As in all areas of PEO Soldier, Hansen said, that input is essential to continued improvements.

"We are always seeking feedback and changes have been made because a Soldier or an NCO called in and said I have a suggestion," he said. "A lot of changes come up through the Training and Doctrine Command because they are the user command, but we get direct calls as well as feedback from our Web site."

Product Manager Sensors and Lasers

Product Manager Sensors and Lasers enables the Soldier to "own the night" by providing them technologies that enhance the lethality of the individual and crew-served weapon systems and that improves the Soldier's situational awareness through three core technologies: image intensification, forward-looking infrared and lasers.

Maj. Dave Webber, assistant product manager for Sensors and Lasers, said their mission is to develop new systems that will reduce the weight and size of equipment a Soldier has to carry while also reducing the amount of power each system uses.

For example, "We now have a multifunction aiming laser that combines a visible red pointer with an infrared pointer that is visible under night vision," Webber said. "The system has gone down to one battery, is smaller and lighter and fits on the M-16."

One area that Webber said they constantly get requests from the field is for the enhanced night-vision goggles that combine night vision with thermal vision. Currently under testing, the Enhanced Night Vision Goggle (ENVG) is slightly heavier but has the added benefit of thermal imaging.

"We take our Soldier inputs and try to meet them. The perfect example is the ENVG, and as industry steps up with new technology we continue to look at that as well." Webber said.

Product Manager Clothing and Individual Equipment (CIE)

With some exceptions, like small arms and night vision devices, if you have to wear it or carry it, CIE is responsible for it. Product Manager CIE supports the Soldier in operational environments and improves their lethality, survivability, situational awareness, health, safety, mobility and sustainability by providing ballistic protection and safe, durable and operationally effective individual and unit equipment.

"We provide Soldiers with things as simple as socks and underwear to [items] as complicated as chemical protective gear, parachutes, body armor, helmets, boots and things like tasers for military police," Al Dassonville, deputy program manager for CIE said. "We have about 300 programs that are in various stages of development, fielding or maintaining. We buy 50 percent of the items that are RFI products, and we are also responsible for procuring and securing the Army Combat Uniform (ACU)."

What is big for next year or so, Dassonville said, is the introduction of a cold weather clothing ensemble called the Extended Cold Weather Clothing System (ECWCS).

"We went to an outdoor retailer show and looked around and asked questions about what mountain climbers wear. Based on industry and Soldier input the Army came up with a seven-layered system for this new uniform," said Maj. Robert Helms, CIE. "The new uniform is something a professional outdoorsman would wear, not necessarily a hunter, but a mountaineer."

The current uniform is too bulky, doesn't have flexibility and is very difficult to pack. With the new uniform, currently under testing, it is more compressible, more functional and comfortable to wear. It is also about 25 percent lighter, Helms said.

The Common Remotely Operated Weapon Station (CROWS) is a big hit with Soldiers fighting the Global War on Terrorism. The system gives Soldiers a safer way of engaging the enemy with a high first-round hit probability.

PEO Soldier is working on a program to reduce Soldier combat load by reducing the weight of the M240B machine gun.

Combat Eye Protection is another area that gets a lot of Soldiers' attention, Dassonville said.

A few years ago the Army was entrenched in a development program that was going nowhere fast because it could not find a design that all Soldiers liked, said Sarah Morgan-Clyborne who heads up the program for PEO Soldier.

"We knew that one design was not going to work for the entire Army," she said. "It just so happens that one of the devices Soldiers wanted when they went to Afghanistan and Iraq was the Wiley X SG-1 ballistic goggles. That was our first item. We bought it, tested it and it passed and became the genesis for our eyewear program."

Since that time the Army has introduced numerous variations of eyewear into the inventory from industry that includes laser protection, as well.

Morgan-Clyborne said PEO Soldier revisits all of approved eyewear every two years to ensure it continues to meet the Army specifications for eye protection.

Soldiers who wear prescription glasses were faced with the standard S-9 frame for issue and wear with goggles. These glasses "fogged up and were ugly," Morgan-Clyborne said, causing many a Soldier to not wear them because of the "geek factor." To fix this PEO Soldier worked with U.S. Army Medical Command to come up with a replacement, and the result was a new set of inserts that are available for the Uvex XC goggles, ESS Ice 2 goggles and Revision Military Eyewear.

"This is a big deal for them, and they will wear them," she said. "If they think they look cool in them, they will wear them, and they will get the proper eye protection."

PEO Soldier Weapons

Much in the world of weaponry for the military has remained standard for the most part, explained Col. Carl A. Lipsit, project manager for Soldier Weapons. There have been some improvements to the M-16 rifle, the M-4 carbine, introduction of new scopes and so on, but that is changing rapidly. PEO Soldier Weapons is broken out into two areas, individual weapons and crew-served weapons, and is responsible

for the development, testing and fielding of all current and future weapons systems.

Probably one of the most talked about improvements to recently hit the field is the introduction of the Common Remotely Operated Weapons Systems or CROWS as it is known in the field. CROWS is a vehicle-mounted weapon station that enables under-armor/remote operation of the MK19 Grenade Machine Gun, M2 .50 caliber Machine Gun, M240B Medium Machine Gun, M249 Squad Served Automatic Weapon and XM307 Advanced Crew Served Weapon. It increases engagement range, first-round-hit probability and operational response time.

"We are currently putting them on top of up-armored humvees in theater right now, and it allows the entire crew to stay inside the vehicle which is the safest place to be," Lipsit said. "The Soldiers [are not] exposed or be behind the gunner protective shields or anything. The CROWS puts them inside, under armor so they can engage the enemies at a pretty good range as well as letting them obtain target identification and acquisition easier."

Richard Audette, deputy program manager PEO Soldier Weapons, said CROWS fits in well with today's Soldier because it is like a video game.

"Basically the Soldier is sitting inside the humvee; he's got a screen, a joystick and he can operate the systems completely from inside. He can load the weapon, move it 360 degrees, elevate the azimuth and fire all while in movement," he said. "Today we have computers involved in everything and these Soldiers are telling us it's like 'Wow. It's exactly like the stuff I have been growing up on for the last 10 years.' It's a new generation of Soldier, and we are trying to leverage the technology to them; CROWS is just one example."

Also new for the combat Soldier is the Semi-Automatic Sniper System (SASS) which is now in testing. It is a multiple, magazine-fed 7.62mm rifle. Then there is the XM307 25mm Advanced Crew Served Weapon which ise remotely operated on top of a vehicle or dismounted and used on the ground. It weighs about 50 pounds, well below the 128 pounds of a .50 caliber machine gun.

Speaking of the .50 caliber machine gun, Soldiers will love the improvements being made on it, Audette said.

"It will have fixed head space and timing as well as a quick-change barrel with a handle on it," he said. "It will also have a flash suppressor on the end. Putting on the barrel will be like changing a lens in your camera. It's a bayonet type where you push it in, turn it and click, you're done."

On the individual weapons side of the house, Lt. Col. Tim Chyma, product manager Individual Weapons, said Soldiers can expect to see a new family of suppressors for the M-9 pistol, rifles and carbines.

Under PM Individual Weapons, Chyma said they are looking at procuring weapons that have interchangeable parts like firing pins, magazines and so on through the Objective Individual Combat Weapon System Increment (OICW) program. OICW is a developmental program set up in two increments designed to have commonality with weapons systems. In increment one there are variants of weapons that include special compact carbines, designated marksmanship, as well as light machine guns that will all have a commonality of parts. Increment two will consist of airburst weapons – something he said the technology is ready; the next phase is to actually get it to the Soldier and do operational testing.

Around since the 1990s, the M4 carbine is steadily going through improvements with the addition of a new rail system that allows for the mounting of optics, laser pointers and more. The M4 is also slated for an under-barrel grenade launcher for issue to brigade combat teams. There are many more improvements coming the Soldier's way as far as individual and crew-served weapons. In saying that, however, Lipsit said they always need input from the field.

"We are putting out a survey to folks coming back from theater, and if they give us good feedback about their weapons – what they like about them, what they don't – we can look at changes or improvements to the systems," Lipsit said.

From Belvoir to Picatinny, PEO Soldier is working every day to ensure the Soldier as a system does not lose its impact on today's Army.

"These guys and gals are getting the best America has to offer. We are getting them new weapons, making improvements to weapons and training them how to use them," Moran said. "This organization is committed to saving lives; to do everything we can to save lives. We are committed to improving the quality of your life, to do everything we can to improve the quality of your life while you are in combat. And we are doing everything we can to help Soldiers kill and destroy the enemy. That's what I like to tell Soldiers when I see them."

For more information on PEO Soldier and the offices that outfit today's Soldier, go to *https://peosoldier.army.mil/.*

Editor's note: This is part one of a two-part story that encompasses how the Army has changed the way it views the individual Soldier when it comes to getting Soldiers the things they need to fight and win on the battlefield. Part one visits the world of PEO Soldier. Part two, which will appear in the July issue, will visit the world of U.S. Army Soldier Systems in Natick, Mass., and see what is on the horizon for combat feeding systems, shelter systems, airdrop systems and more.